Templates Part II
Interim Progress Report - Budget Period Three
Workplan - Budget Period Four
Focus Area E: Health Alert Network/Communications and Information Technology

Budget Period Three Progress Report

Using the Interim Progress Report template below, provide a brief status report that describes progress made toward achievement of each of the *critical capacities* and *critical benchmarks* outlined in the continuation guidance issued by CDC in February 2002. Applicants should describe their agency's overall success in achieving each critical capacity. The progress report narratives should not exceed 1 page, single-spaced, for each critical capacity. Applicants are welcome to use bullet-point format in their answers, so long as the information is clearly conveyed in the response.

CRITICAL CAPACITY: To ensure effective communications connectivity among public health departments, healthcare organizations, law enforcement organizations, public officials, and others as evidenced by: a) continuous, high speed connectivity to the Internet; b) routine use of e-mail for notification of alerts and other critical communication; and c) a directory of public health participants (including primary clinical personnel), their roles, and contact information covering all jurisdictions.

Provide an update on progress during Project Year III toward achieving this critical capacity:

The Massachusetts Department of Public Health (MDPH) has continued its collaborative efforts to ensure effective communications connectivity.

In order to establish high speed connectivity to the Internet in all 351 local health jurisdictions (Massachusetts has no county structure), MDPH engaged in the following endeavors:

- an Alert Network wireless proof of concept to establish high-speed, secure wireless access to the Massachusetts Alert Network (to be completed by 6/30/2003).
- an engineering study to determine the optimal means to establish high speed connectivity to the most rural jurisdictions. This study will consider the utilization of dark fiber, wireless, wire and satellite connectivity.

Massachusetts leverages the routine use of email for notification. Currently deployed, the Massachusetts Alert Network allows over 400 initial users to disseminate information electronically through email, pager, voice phone and fax.

In an effort to establish regionalization, the Commonwealth defined five Bioterrorism Preparedness Regions. As a core component of the Alert Network, a role-based directory contains contact information of key personnel who represent multiple agencies and organizations from every geographic

area of the Commonwealth. Massachusetts also has a database of contact information stored in a Dialogics Broadcast Communicator. This information is routinely used to disseminate important information to each of the 351 local boards of health.

Numerous Commonwealth agencies and organizations have collected and maintain large databases of contact information. They have further and built email distribution lists that include membership from key decision makers within the agencies.

Critical Benchmark #11: Estimate the percentage of your state's population that lives in local jurisdictions that are covered by the Health Alert Network

___70___%

Critical Benchmark #12: Is your state's communication system capable of sending and receiving critical health information (including alerts of emergency event data) among hospital emergency departments, state and local officials and law enforcement officials, 24 hours a day, 7 days a week?

☒ **YES** ☐ **NO**

CRITICAL CAPACITY: To ensure a method of emergency communication for participants in public health emergency response that is fully redundant with e-mail.

Provide an update on progress during Project Year III toward achieving this critical capacity:

Recognizing the importance of redundant mechanisms of communication, public health emergency response personnel currently have the following tools at their disposal:

- Alert Network
- radio communication
- Dialogics Broadcast Communicator

The Alert Network application allows for messaging to email, pagers, fax and voice phone interface. As part of the Alert Network pilot project, members were given either:

- Nextel mobile phones with two way messaging and push-to-talk capability or
- Two-way, alpha numeric pagers

By the end of June 2003, Massachusetts will have enhanced the functionality of the current application to include secure wireless access. These enhancements will serve to broaden the mechanisms by which and locales at which users may access the applications. Users were given either:

- iPaq wireless personal digital assistants or
- tablet PC's

In parallel efforts, radio devices were distributed to multiple agencies and secure, monitored repeaters were established throughout the Commonwealth to ensure thorough radio coverage. Finally, the Commonwealth has continued to support the Dialogics Broadcast Communicator for easy dissemination of fax and email notifications.

These collaborative efforts reinforce the importance of opening inter-agency communication channels as well as provide a redundant mechanism of communication for all key public health emergency response personnel. In efforts to establish communication fully redundant with email, over five types of communication devices have been distributed throughout the Commonwealth and our systems can currently support many more.

CRITICAL CAPACITY: To ensure the ongoing protection of critical data and information systems and capabilities for continuity of operations. (See Appendix 6, IT function #8.)

Provide an update on progress during Project Year III toward achieving this critical capacity:

The Bureau of Communicable Disease Control (BCDC) fully appreciates the importance of data confidentiality and security, and has protected access to confidential data through various application-based and physical security systems.

All Bureau applications with critical data (web-based and non-web based) are at a minimum, strong password protected. Additionally, web-based systems use 128-bit encryption and the necessary firewall configuration to ensure data security. The Bureau is working with other Commonwealth agencies and organizations to implement the central administration of second factor authentication.

Physically, all rooms which contain paper or computers holding confidential data are secured by card key and or keypad readers and remain locked at all times. The hosting facility for our web-based applications is also secured with locks and has video monitoring. All security functions are fully auditable.

CRITICAL CAPACITY: To ensure secure electronic exchange of clinical, laboratory, environmental, and other public health information in standard formats between the computer systems of public health partners. Achieve this capacity according to the relevant IT Functions and Specifications.

Provide an update on progress during Project Year III toward achieving this critical capacity:

In close coordination with the Bureau of Laboratory Sciences (BLS), the Bureau of Communicable Disease Control (BCDC) will continue to enhance its electronic communications capabilities to exchange clinical, laboratory, environmental and other public health information. Massachusetts has recently completed the conceptual design of the Electronic Laboratory Reporting and Communication (ELR) Component. The ELR component will allow the exchange of secure client transactions through web-based communications.

The ELR component is an extranet application that will extend the functionality of the recently developed State Laboratory Information System (SLIS). SLIS includes a common data repository (CDR) that will be accessed by all laboratories within the BLS. The CDR is based on the PHIN logical data model and utilizes common database technology (SQL Server) using Windows NT and supports ODBC connectivity.

The conceptual design of the ELR component includes the use of a commercial interface engine as a solution for both ELR and SLIS transmission and reception of HL7 messages and data. The interface engine will be selected to support HL7, Version 2.4 and earlier, ebXML, message queues and will have the ability to translate and manipulate LOINC and SNOMED codes. The web interface will use standard web security features of the web server platform, which will be selected during the detailed design phase, and include strong authentication connectivity. These include HTTP User Authentication and session encryption using HTTPS and secure socket layer (SSL).

In addition the Massachusetts Department of Public Health (MDPH) has an established Data Standards Committee. The committee meets monthly to define and reenforce data confidentiality and data standards policies throughout the Department, in accordance with the IT Functions and Specifications, outlined in the Cooperative Agreement, Appendix 4.

Budget Year Four Workplan

For each Recipient Activity applicants should complete the work plan templates attached below. Applicants are welcome to use bullet-point format in their answers, so long as the information is clearly conveyed in the response. All responses should be brief and concise. **Please note that full use of the CDC templates will meet all of the requirements for submission of a progress report and work plan**. Although no additional information is required, grantees may elect to submit other essential supporting documents via the web portal by uploading them as additional electronic files.

CRITICAL CAPACITY #11: To ensure effective communications connectivity among public health departments, healthcare organizations, law enforcement organizations, public officials, and others (e.g. hospitals, physicians, pharmacies, fire departments, 911 Centers)

RECIPIENT ACTIVITIES:

1. Implement a plan for connectivity of key stakeholders involved in a public health detection and response including a 24/7 flow of critical health information, such as clinical data (build according to IT functions #1-3 in Appendix 4), alerts, (build according to IT Functions #7-9 in Appendix 4) and critical event data, (IT Functions #1-3 in Appendix 4), among hospital emergency departments, state and local public health officials, law enforcement, and other key participants (e.g. physicians, pharmacies, fire departments, 911 Centers) **(LINK TO CROSS CUTTING ACTIVITY *INTEROPERABILITY OF IT SYSTEMS*, Attachment X) (CRITICAL BENCHMARK #18)**

Strategies: What overarching approach(es) will be used to undertake this activity?

The Massachusetts Department of Public Health (MDPH) engaged more than 15 of the Commonwealth's agencies and organizations, including hospitals, state and local public health officials, public safety, EMS and other key participants in establishing communication infrastructures for alerting and data sharing. With regular meetings, the key stakeholders have played an integral role in defining and optimizing the solution suite for addressing the Commonwealth's communication needs. From establishing communication protocols to specifying application requirements, this cross agency cooperation has ensured coordinated efforts throughout the Commonwealth as well as optimal system integrations.

To date, MDPH supports and maintains the Massachusetts Alert Network, Dialogics Broadcast Communicator and several in-house communicable disease surveillance applications, which receive some electronic laboratory reports. Currently in pilot phase the Alert Network has over 700 pilot users representing numerous agencies and organizations that have worked in concert toward establishing the proper channels of communication. These agencies and organizations include: MA Information Technology Division, Executive Office of Public Safety, Anti-Terrorism Task Force, Department of Food and Agriculture, Department of Public Health, Fire, Hospitals, Local Boards of Health, Mass League of Community Health, Mass Medical Society, DEP, US General Services Administration, US HHS and CDC.

MDPH plans to continue a coordinated, phased roll-out of the Alert Network to address the communication needs of the Commonwealth. Key local health agencies, along with their public health partners will be identified and systematically added and trained as Alert Network users.

MDPH plans to build off this foundation and continue development and implementation of NEDSS Base System (NBS) and Electronic Laboratory Reporting (ELR) applications for secure data exchange in coordination with the currently deployed Alert Network The conceptual design of the ELR Component includes the use of a commercial interface engine as a solution for both ELR and SLIS transmission and reception of HL7 messages and data. The interface engine will be selected to support HL7, Version 2.4 and earlier, ebXML, message queues and the ability to translate and manipulate LOINC and SNOMED codes. The web interface will use standard web security features of the web server platform, which will be selected during the detailed design phase, and include strong authentication connectivity. These include HTTP User Authentication and session encryption using HTTPS and secure socket layer (SSL).

Combined, NBS, ELR and the Alert Network will allow for secure communication of alerts and transfer of critical data. In addition, interfaces between these systems and those of other agencies (i.e. radio systems, web-based systems, databases, Commonwealth solution to single-sign-on, etc.) will be built.

All design, development and implementation will be conducted according to the specifications and guidelines of the Public Health Information Network (PHIN).

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Continue roll-out of Alert Network to local health agencies and other public health partners including provision of high speeed internet access
- Refine stakeholder requirements for NBS and ELR solutions
- Release RFR for development of ELR application
- Integrate NBS and ELR with Alert Network and other Commonwealth applications as appropriate

Timeline: What are the critical milestones and completion dates for each task?

- Pilot Alert Network acceptance by 9/2003
- Initiate phased roll-out of Alert Network by 10/2003
- Finalize stakeholder requirements by 9/2003
- Initial development of ELR solution by 12/2003
- Implement NBS at state level by 1/2004
- Participation in NBS by at least 3 major local health authorities by 4/2004
- Complete ELR technical architecture by 3/2004
- Integrate applications, including Commonwealth secure single sign-on by 2/2004

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and identified contractors will be responsible for all tasks, except NBS, which is overseen by CDC.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

The ELR component will be developed in accordance with the MDPH Systems Development Life Cycle (SDLC) methodology. Metrics will be employed on selected tasks as appropriate to monitor performance, identify potential issues as early as possible in the SDLC process and determine the effectiveness of remedial actions taken. Major milestones dates will be monitored as to the estimated and actual completion dates. Once the metrics are defined and gathered, they will be communicated regularly to the SLIS Project Team for project tracking and process improvements.

Success of NBS will be evaluated by its implementation at the state level, with participation from at least three major local health jurisdictions by April 2004.

2. Ensure, by testing and documentation, at least 90 percent of the key stakeholders involved in a public health response can receive and send critical health information including alerts and critical event data. (Build according to Appendix 4 - IT Functions and Specifications.) **(CRITICAL BENCHMARK #19)**

Strategies: What overarching approach(es) will be used to undertake this activity?

In order to ensure that 90 percent of the key stakeholders involved in a public health response can receive and send critical health information, MDPH supports and maintains the Massachusetts Alert Network and the Dialogics Broadcast Communicator (as a back-up).

Currently in pilot phase the Alert Network has over 700 pilot users representing numerous agencies and organizations that have worked in concert toward establishing the proper channels of communication. These agencies and organizations include: MA Information Technology Division, Executive Office of Public Safety, Anti-Terrorism Task Force, Department of Food and Agriculture, Department of Public Health, Fire, Hospitals, Local Boards of Health, Mass League of Community Health, Mass Medical Society, DEP, US General Services Administration, US HHS and CDC. MDPH plans to continue a coordinated, phased roll-out of the Alert Network to address the communication needs of the Commonwealth. The Alert Network, in conjunction with redundant communication systems (e.g. radio network, cell phones, two-way pagers and wireless devices), will ensure that 90 percent of the key stakeholders can send and receive alerts and critical data. All applications and communication devices involved will meet the IT functions and specifications as outlined in the IT Functions and Specifications, Appendix 4.

MDPH plans to conduct drills and distribute test alerts to ensure the efficiency of the the alerting system. All such exercises are audited, documented, analyzed and used to make improvements.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Establish protocols for inter and intra agency communication
- Define drills and test scenarios through table top exercises involving multiple agencies and jurisdictions
- Conduct drills and scenarios
- Analyze and document breadth and efficiency of communication distribution

Timeline: What are the critical milestones and completion dates for each task?

- Establish inter and intra agency protocols by 9/2003
- Develop table top excercises by 9/2003
- Complete table top exercises by 10/2003
- Assess success of communication systems

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

All parties (as listed above) should be included in the drill definition and execution to achieve accurate and realistic testing.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Conduct drills and author documentation verify 90% coverage.

3. Develop effective public health communications connectivity by identifying local health agencies to serve as model sites for training and education, support for organizational capacity building, and the creation of knowledge management systems for public health practitioners. In selecting sites, grantees should consider localities that were among the 120 cities identified in the Response to Weapons of Mass Destruction Act of 1997, are the largest population centers in the state, are state capitals, have special significance for terrorism preparedness and response

(e.g., military base, strategic location, international port of entry, special population), and are not direct recipients of funding under this cooperative agreement.

Strategies: What overarching approach(es) will be used to undertake this activity?

Utilizing wireless technologies, MDPH will collaborate with the Boston Public Health Commission (BPHC) and local hospitals to develop applications to facilitate secure data exchange in emergency crisis situations. This project will build on the knowledge gained by BPHC during their successful deployment of wireless applications for patient tracking during the 2003 Boston Marathon.

Additionally, MDPH will collaborate with one or more of the three MMRSs to deploy wireless applications for Strategic National Stockpile (SNS) tracking and inventory management.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Children's Hospital, Boston will collaborate with MDPH and BPHC to design, implement and manage a wireless pilot project to test the use of the PING Response tool in conjunction with wireless devices. This project will build upon knowledge gained during the Boston Maraton pilot wireless project sponsored by BPHC. This collaborative project will demonstrate health and emergency department personnel ability to:

- collect patient information
- transfer this information securely and in conformance with HIPAA for MDPH, patient, and medical use and
- utilize Alert Network, PING and other applications in a wireless enviornment

Additionally, MDPH will collaborate with the one or more of the three MMRSs to implement and manage wireless techonoligies to test the use of the Alert Network, specifically the Prophylaxis and Vaccine Management System (PVMS) component, to manage inventory and asset tracking of the SNS. This project will demonstate the ability to:

- inventory SNS through wireless applications utilizing either barcode or RFID tags
- manage recpackiging and distribution process
- facilitate transfer of field data to central repository

Timeline: What are the critical milestones and completion dates for each task?

- Development requirements and specifications for PING project by 10/2003
- Conduct drill for PING project by 12/2003
- Develop requirements and specifications for SNS project by 11/2003
- Condcut drill for SNS project by 2/2004

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH, BPHC, and Children's Hospital, Boston will be responsible for the PING project. MDPH and selected MMRSs in conjunction with local health authorities will be responsible for the SNS project.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success of the project will be defined by drills being successfully executed. The drills should serve as foundations for expansion of the projects to other municipalities and to the statewide level.

4. (Smallpox) Develop a system to enhance public health capacity for recruitment and tracking of participants, data collection, storage, and management, reporting and evaluation activities related to the National Smallpox Vaccination Program.

Strategies: What overarching approach(es) will be used to undertake this activity?

Develop a system incorporating existing systems and adding functions or modules as needed.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Where possible, establish links among existing systems, including the PVMS, the hospital smallpox coordinators spreadsheet and the certified vaccination team members spreadsheet.
- Determine additional functions that are needed to support activities related to the Smallpox Vaccination Program

Timeline: What are the critical milestones and completion dates for each task?

- Review existing systems by 11/2003
- Where feasible, establish links among the existing systems by 4/2004
- Identify additional functions, if necessary, to support the Smallpox Vaccination Program in Massachusetts

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

The following MDPH personnel will be responsible for these tasks:

- PVMS Coordinator
- Alert Network Coordinator, with input from the Smallpox Response Coordinator
- Immunization Program Medical Director
- Epidemiology Program Manager
- BT Nurse Coordinator
- BT Medical Director

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Progress toward successful completion of this activity will be determined by the accomplishment of the milestones according to the timeline described above.

5. (Smallpox) Ensure that hospitals, clinics, and other participants in the National Smallpox Vaccination Program maintain a directory of smallpox vaccination team members and are provided regular updates on implementation of program activities with appropriate technical assistance.

Strategies: What overarching approach(es) will be used to undertake this activity?

Provide information on the Hospital Smallpox Vaccination Monitoring System (HSVMS) to all hospitals with smallpox vaccination teams. Provide training on the PVMS to all facilities and agencies with sufficiently large numbers of vaccinees to warrant such training (MDPH will provide data entry into the PVMS for all other entities).

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Include information on the HSVMS in the Smallpox Vaccination Team Training Manual and in presentations during the smallpox vaccination certification training
- Offer training on the PVMS as an option for those facilities that wish to do their own data management of vaccination team volunteers

Timeline: What are the critical milestones and completion dates for each task?

- Information on the HSVMS is included in the Smallpox Vaccination Team Training Manual and in presentations during the smallpox vaccination certification training. Information on the HSVMS will be updated as needed.
- Training on the PVMS is offered to any facility that wishes to do its own data management of vaccination team volunteers.

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

The following MDPH personnel will be responsible for these tasks:

- Smallpox Coordinator
- PVMS Coordinator
- BT Nurse Coordinator, with input from the BT and Immunization Program Medical Directors

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Progress toward successful completion of this activity will be determined by the accomplishment of the milestones according to the timeline described above.

CRITICAL CAPACITY #12: To ensure a method of emergency communication for participants in public health emergency response that is fully redundant with standard Telecommunications (telephone, e-mail, Internet, etc.).

RECIPIENT ACTIVITIES:

1. Assess the capacity in your jurisdiction for redundant communication systems/devices (two-way radios, cell phones, voice mail boxes, satellite phones, amateur radio groups, hand radios or wireless messaging), the capacity of existing systems at the state and local level to broadcast and/or autodial to automatically distribute alerts and messages to these systems/devices, and the capacity to link to the emergency communication systems of local emergency response partners. If necessary, make improvements during this budget cycle.

Strategies: What overarching approach(es) will be used to undertake this activity?

Separate from, but coordinated with the Commonwealth's Needs Assessment project, MDPH initiated

a smaller scoped engineering study to assess the optimal method for ensuring redundant communication systems/devices for EMS. Expansions of this study will include assessment of all available forms of communication including wireless, wire, radio, and telephone and will also address every geographic region of the state. With no county structure, MDPH must ensure that each of the 351 jurisidictions, which include very rural towns, has access to a communication system. Considerations of this study will include cost, extensibility, robustness and breadth of service. Improvements and enhancements to redundant communication systems/devices will be made based on the results of the study.

Additionally, capitalizing on the collaborative efforts of our partners throughout the state, MDPH plans to interface with numerous communication systems including those from Public Safety such as Statewide Anti-Terrorism Unified Response Network (SATURN), EMS, Hospitals and Fire. This linkage will not only allow for valuable redundancy, but will also establish a presence at the state and local level.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Conduct expanded engineering study to assess methods to establish redundant communication infrastructure – considerations include wire, wireless and fiber optic
- Determine optimal means of system integration
- Purchase necessary additional hardware (i.e. satellite phones, radios, etc.)

Timeline: What are the critical milestones and completion dates for each task?

- Engineering study complete by 10/2003
- Additional hardware purchased by 12/2003

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and identified contractors with input from EMS, Massachusetts Hospital Association (MHA), Executive Office of Public Safety (EOPS) and other public health partners.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

MDPH will test and execute drills on an ongoing basis to produce reports which will highlight successes and failures to ensuring a method of emergency communication.

2. Implement a second method of receiving critical alerts such as pagers, cell phones, voice mailboxes, or other devices to allow public health participants to receive alerts in full redundancy with e-mail.

Strategies: What overarching approach(es) will be used to undertake this activity?

MDPH has begun distribution of iPaq personal digital assistants, wireless enabled laptops, wireless enabled tablets, Nextel cell phones, two-way alpha-numeric pagers. As the Alert Network is implemented statewide, key players will continue to receive devices that allow them to receive alpha-numeric messages. The Alert Network also provides for computer generated voice alerts via any phone; as a back-up for this method of alerting, MDPH plans to enter into memorandums of understanding

(MOUs) with surrounding states to provide this function in emergency situations. Additionally, back-up call distribution centers provided by vendors will serve as futher redundant methods of communication and allow for mass (>1000 calls) distribution of phone alerts.

The Department plans to contribute to an inter-agency initiative that will provide radio devices to agencies throughout Massachusetts and establish the necessary infrastructure (i.e. repeaters, antennas) to ensure radio coverage.

The project team has initiated the establishment of secure wireless access to the Massachusetts Alert Network. A proof-of-concept in a testing environment with a select group of devises (tablets and pocket PC's) will be complete by June 30, 2003.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Distribute pagers, phones and wireless access devices to key stakeholders
- Implement wireless access to Alert Network
- Enter into MOUs with surrounding states to provide redundant alerting mechanisms
- Interface Alert Network with mass call down distribution center

Timeline: What are the critical milestones and completion dates for each task?

- Distribute alphanumeric pagers and cell phones to Alert Network participants through 5/2004
- Implement wireless access to Alert Network by 8/2003
- MOUs with outside states in place by 10/2003
- Interface Alert Network with call down distribution center by 10/2003.

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and its identified contractors.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

MDPH has a variety of mechanisms for constituents to provide feedback and evaluation, including regular Focus Area E Work Group meetings, MDPH Senior Management meetings and electronic mechanisms. MDPH will also test the alert mechanisms and track the receipt confirmations to determine the effectiveness of the systems and methods of communication. Drills simulating emergency situations will test the effectiveness of utilizing redundant communications provided by vendors or other states.

3. Work with CDC, and as appropriate, other federal agencies, to develop and acquire high frequency and satellite voice/data communications systems between local, state, and federal partners. These systems will be standards based to ensure interoperability.

Strategies: What overarching approach(es) will be used to undertake this activity?

In conjunction with EOPS, specifically MEMA, MDPH will continue to provide high frequency radios to public health and public safety officials, including state, local and federal authorities. In addition, use of satellite phones will be assessed and supplied as necessary.

MDPH is also committed to enhance the radio infrastructure (i.e. repeaters and antennas) throughout the Commonwealth.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Determine gaps in high frequency radio communications
- Provide high frequency radios where needed
- Assess need for satellite phones
- Supply satellite phones as necessary

Timeline: What are the critical milestones and completion dates for each task?

- Ensure redundant high frequency radio communications in place by 12/2003
- Ensure redundant satellite phones in place by 2/2004

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH in collaboration with its public health and public safety partners.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be measured by a fully operational and redundant radio and satellite phone communications system.

4. Collaborate with local emergency service providers to acquire technologies and utilize standards developed by CDC to develop UHF/VHF/HF data and/or voice communication capability between key Public Health Partners.

Strategies: What overarching approach(es) will be used to undertake this activity?

Statewide assessments are currently underway to evaluate frequency usage, coverage, and transmission quality (e.g. clarity, interference, etc.) or radio communications between EMS centers (C-MEDS). Coverage maps have been assembled on a regional basis and will be used to identify areas where coverage is inadequate. Inventories and licensing information have been collected for all C-MEDs and base stations. FCC requirements regarding MED channel usage have also been reviewed. The analysis of this information will result in the development of a statewide frequency plan that will optimize the use of current frequencies and resources. The plan will take into account the FCC requirement that over time EMS operate on narrowband channels.

In assessing possible solutions to improve inter/intra regional C-MED and hospital communications, options that allow for both voice and data communications will be assessed. A radio-based system that allows for sharing of data between C-MEDs and hospitals would complement and serve as the necessary redundancy to any Internet based system. The contractor's work is slated to be completed by the end of June 2003 and a final report with recommendations delivered in July.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

An improved EMS communications system plan will seek to make optimum use of existing frequencies

and resources, expand coverage and minimize interference. Of particular importance is allowing C-MED centers to communicate with one another. The contractor is presently assessing three options for consideration:

(1) Enhanced C-MED Network – This approach would have channels assigned exclusively within regions based on a non-interference basis
(2) Intelligent C-MED Network – This approach would allow for greater management and flexibility within the statewide system. Channels would be distributed based on loading and traffic and would allow for management and allocation of channels
(3) Multiple-Access C-MED Network – This approach would be highly automated (i.e. assigning channels automatically) yet expand capability to allow for broad regional and statewide communications.

All solutions considered will be in accordance with the IT Functions and Specifications as outlined in Appendix 4.

Timeline: What are the critical milestones and completion dates for each task?

- Assessment complete by 7/2003
- Initiate approach to communications solution by 8/2003
- Purchase any necessary hardware by 12/2003

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Responsible partied include MDPH and its identified contractor with input from EMS and other appropriate public health partners.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be measured based on the ability to achieve redundant statewide communications.

5. Develop broadcast auto-dialing voice messaging capabilities.

Strategies: What overarching approach(es) will be used to undertake this activity?

MDPH currently utilizes the Dialogics Broadcast Communicator and the Alert Network for auto-dialing voice messaging. Additionally, we have begun discussions with call centers that could potentially provide thousands of phone lines in the event of a mass call distribution. While the Alert Network will have call out capability, in situations that necessitate mass (>1,000 calls) call distributions, it will securely integrate with a call center to propagate the alert.

As a back-up for this method of alerting, MDPH plans to enter into memorandums of understanding (MOUs) with surrounding states to provide this function in emergency situations.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Establish synchronization capability between the Communicator and the Alert Network
- Establish redundancy and fail over for Alert Network

- Explore interface with mass distribution call center for increased auto-dialing voice messaging capabilities
- Establish MOUs with surrounding states to ensure back up method of alerting

Timeline: What are the critical milestones and completion dates for each task?

- synchronization between the Communicator and Alert Network completed by 10/2003
- redundancy for Alert Network established by 11/2003
- increased auto-dialing voice messaging capabilities identified by 10/2003
- MOUs with surrounding states in place by 10/2003

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH will provide leadership in concert with efforts from the Massachusetts Emergency Management Agency (MEMA) (for establishing fail over hosting site) and other vendors as appropriate.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

MDPH will test the functionality of all establish interfaces and modules to ensure full functionality before releasing into production. In addition, continued regression and performance testing will be done periodically. All contracted vendors engaged with MDPH must submit routine project progress reports to MDPH management for review. This fundamental requirement of the MDPH System Development Life Cycle and contract engagement is crucial in managing vendors.

6. Provide for technological and staffing redundancy of critical information and communication systems to support these functions. (Build according to IT function #9 in Appendix 4.)

Strategies: What overarching approach(es) will be used to undertake this activity?

MDPH plans to establish redundancy on the production Alert Network instance as well as house a independent and synchronized fail over/back-up instance in a different location. The production site is planned to be hosted within the Commonwealth's infrastructure, while the fail over site will reside in a secure, 24/7 underground bunker operated by MEMA. All security policies, access and firewalls will be in accordance with IT function #9 in Appendix 4.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Buy necessary hardware and software for site redundancy
- Engage production hosting facility
- Establish fail over site at MEMA bunker

Timeline: What are the critical milestones and completion dates for each task?

- hardware and software purchased by 9/2003
- production facility engaged by 9/2003
- fail over site at MEMA established by 11/2003

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH, in collaboration with the Massachusetts Information Technology Division (ITD) and MEMA, will ensure redundancy of critical communication systems.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be measured by the development of a fully redundant and secure system. Independent validation and verification will be employed, including disaster simulations and intrusion detections.

7. Routinely assess the timeliness and completeness of the redundant method of alerting, as it exists to reach participants in public health response. **(CRITICAL BENCHMARK #20)**

Strategies: What overarching approach(es) will be used to undertake this activity?

In conjunction with local health and public safety authorities, MDPH plans to establish drills and scenarios that will aid in assessing the timeliness and completeness of redundant alerting methods. These drills will not only involve alerting participants, but also a full analysis of the response and action precipitating from the test alert.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Define drills and scenarios for assessing alerting methods
- Conduct drills
- Analyze and document participant feedback and drill execution

Timeline: What are the critical milestones and completion dates for each task?

- Define drills and scenarios by 9/2003
- Conduct drills by 12/2003
- Analyze and document participant feedback and drill execution by 2/2004

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and its public health and safety partners, along with its identified contracter will oversee this charge.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Achievement will be measured by the successful completion and analysis of at least one drill.

CRITICAL CAPACITY #13: To ensure the ongoing protection of critical data and information systems and capabilities for continuity of operations in accordance with IT function #8 (see Appendix 4).

RECIPIENT ACTIVITIES:

1. Assess the existing capacity in your jurisdiction regarding policies and procedures for protecting and granting access to secure systems for the management of secure information, system

backups, and systems redundancy. If necessary, develop a proposal for improvements during this budget cycle.

Strategies: What overarching approach(es) will be used to undertake this activity?

MDPH is currently engaged with two primary sites for application hosting: the MEMA bunker and the state-run Massachusetts Information Technology Center. Both environments will be outfitted with the necessary security and back-ups according to HIPAA and PHIN.

Policies and procedures will be established outlining the necessary measures that must be in place to ensure a secure environment. These will include requirements for locked facilities and racks with auditable security trails, video monitoring and electromagnetic shock suppression.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Formal policies and procedures will be developed to ensure a secure environment and back up
- Primary site in place at ITD with fully redundant fail over site in place at MEMA

Timeline: What are the critical milestones and completion dates for each task?

- Initiate formalization of policies and procedures by 9/2003
- Both sites in place by 1/2004

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH, ITD and MEMA will work collaboratively to develop these policies and procedures and site establishment.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be measured by the completion of said policies and procedures and the establishment of redundant sites.

2. Perform regular independent validation and verification of Internet security, vulnerability assessment, and security and continuity of operations practices, and rapidly implement recommended remedial activities.

Strategies: What overarching approach(es) will be used to undertake this activity?

MDPH has budgeted for regular independent validation and verification (IV&V) of Internet security on all systems to ensure HIPAA and PHIN compliance. This analysis will include virus protection level, penetration testing, load balancing and performance testing and fail over testing. Realizing that security is critical for applications, MDPH ensures that all necessary remedial action will be performed before bringing systems on-line.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Contract with specialists for IV&V of production applications, possibly utilizing direct assistance from CDC
- Define and execute IV&V
- Rapidly implement identified recommendations

Timeline: What are the critical milestones and completion dates for each task?

- Identify contractor for IV&V by 9/2003
- Begin testing by 10/2003

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH, and its identified contracts, possibly with direct assistance from CDC.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be measured by continued IV&V with rapid deployment of identified recommendations.

3. **Activities that may be considered:**

a. Establish a firewall for the protection of critical information resources from the Internet.

Strategies: What overarching approach(es) will be used to undertake this activity?

Firewalls will be used to protect all web-based applications from wire and wireless access through the Internet. Firewalls will securely provide access to an ebXML SOAP gateway to provide a service for secure Internet receipt of public health information. MDPH plans to host most of its application at Commonwealth run facilities that leverage a secure enterprise architecture. Once established, the hosting infrastructure within the Commonwealth will allow for multiple applications and adequate data protection.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Design application architecture
- Purchase and deploy necessary hardware/software to establish firewall

Timeline: What are the critical milestones and completion dates for each task?

- Design application architecture by 10/2003
- Establish firewall by 10/2003
- Identify contractor IV&V by 9/2003

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH, its identified contractors and ITD will oversee this function.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be measured by the implementation of firewalls and subsequent IV&V.

b. Implement Public Key Encryption (PKI), according to specifications in IT Function #9 (see Appendix 4) or equivalent methods of strong authentication for remote access from the Internet.

Strategies: What overarching approach(es) will be used to undertake this activity?

The current username and password security of the Alert Network will be augmented to include a second factor authentication. The selection, implementation, distribution and management of this second factor is being driven by not only the needs of the Alert Network, but also other applications within the Commonwealth. Recognizing that authentication mechanisms and identity proofing (verifying that a user requesting registration with an application is in fact who he or she claims to be) should be a centrally administered service, MDPH has been working in close concert with many other state agencies. Security policies will be implemented with authentication based on industry standard X.509 certificates, secure tokens and other applicable means as identified.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Conduct research and make strategic decision about best second factor authentication method for DPH and other Commonwealth applications.
- Integrate second factor authentication with Commonwealth's single sign-on web portal
- Maintain role-based directory utilizing LDAP v3.0

Timeline: What are the critical milestones and completion dates for each task?

- Integration of second factor authentication by 2/2004
- Ongoing maintenance of role-based directory

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

ITD, MDPH and its contractors will oversee these tasks.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Independent verification of security on an annual basis with successful implementation of identified recommendations.

c. Develop role-based authorization technology and processes to ensure selective authorization to information resources using technologies identified in IT Function #7 (see Appendix 4).

Strategies: What overarching approach(es) will be used to undertake this activity?

With input from numerous agencies, MDPH has implemented an extensive role-based directory. This directory is currently leveraged for authentication and authorization to multiple IT systems. While the Alert Network is currently functional, a Commonwealth identity management solution, Secure Enterprise Identity Management (SEIM), is being explored with the intention of migrating the Alert Network's user directory into that environment at the appropriate time. Directories will utilize an LDAP standard-based

service to allow data access and sharing as appropriate.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Maintain role-based directory for Alert Network
- Transfer and share, as appropriate, directory information utilizing LDAP Data Interchange Format (LDIF) standard

Timeline: What are the critical milestones and completion dates for each task?

- Maintenance of directory is on-going
- LDIF messaging in place by 11/2003

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and its identified contractors will oversee these tasks.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Successful implmentation of role-based director will include wide coverage of public health partners in the directory structure; successful LDIF messaging will be evaluated by the ability to securely transfer and share directory information between apprpriate directory structures.

d. Institute server- and client-based virus checking software to protect critical systems.

Strategies: What overarching approach(es) will be used to undertake this activity?

All critical systems will have server and client based virus checking software as appropriate. Currently MDPH uses Trend Micro's NeatSuite application to provide comprehensice server side virus protection of the Massachusetts Alert Network. Client side virus protection is administered centrally to all DPH desktops.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Continue maintenance and upgrade of virus protection software.
- Establish virus protection on all future critical systems.

Timeline: What are the critical milestones and completion dates for each task?

Ongoing.

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

- MDPH and partnering vendors.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

MDPH routinely updates and monitors virus protection software. In addition, an element of system independent verification and validation includes testing the robustness of the deployed virus protection software.

e. Contract with an independent IT security firm to perform ongoing penetration testing and

vulnerability analysis.

Strategies: What overarching approach(es) will be used to undertake this activity?

Penetration and vulnerability testing is a routine part of the Commonwealth's System Development Life Cycle. Please refer to Critical Capacity 13, Recipient Activity numbers 2, 3a, and 3b.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Please refer to Critical Capacity 13, Recipient Activity numbers 2, 3a, and 3b.

Timeline: What are the critical milestones and completion dates for each task?

Please refer to Critical Capacity 13, Recipient Activity numbers 2, 3a, and 3b.

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Please refer to Critical Capacity 13, Recipient Activity numbers 2, 3a, and 3b.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Please refer to Critical Capacity 13, Recipient Activity numbers 2, 3a, and 3b.

f. Integrate all remote access to health department IT resources using commercial, off-the-shelf products for a single method of authentication.

Strategies: What overarching approach(es) will be used to undertake this activity?

The Commonwealth has initiated a project to provide a secure, single-sign-on portal to all state government applications. MDPH plan to support and cooperate with the Secure Enterprise Identity Management (SEIM) project in order to establish a scalable means of user authentication. Currently the Commonwealth has purchased the Netegrity Site Minder product and is engaged in defining the appropriate policies and responsibilities for its administration and maintenance.

For additional information, please refer to Critical Capacity 13, Recipient Activity number 3b.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

For additional information, please refer to Critical Capacity 13, Recipient Activity number 3b.

Timeline: What are the critical milestones and completion dates for each task?

For additional information, please refer to Critical Capacity 13, Recipient Activity number 3b.

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

For additional information, please refer to Critical Capacity 13, Recipient Activity number 3b.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

For additional information, please refer to Critical Capacity 13, Recipient Activity number 3b.

g. Implement software systems and/or servers to support Critical Capacities elsewhere in this guidance. Provide training and support on these systems to improve the ability of public health participants to effectively use them.

Strategies: What overarching approach(es) will be used to undertake this activity?

MDPH plans to support requirements for and development or purchase of an Assets Management system to meet the needs of public health (including hospitals and EMS) and public safety (specifically MEMA). If available, COTS solutions that provide functions to support all agencies including a hospital diversion system will be prioritized. Once implemented, training and support of the system will be provided.

Additionally, MDPH plans to provide support and training to IT and lab professionals at hospitals in order to ensure that all hospitals actively particpate in ELR activities as described in Critical Capacity #14, recipient activites 1-7.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Requirements analysis for Assets Management system
- Identification and implementation of COTS solution, if available
- Support and training for roll-out of Assets Management system
- Support and training of hospital based IT and lab professionals to ensure effective ELR as described in Critical Capacity #14

Timeline: What are the critical milestones and completion dates for each task?

- Requirements analysis for Assets Management system by 10/2003
- Identification and implementation Assets Management system by 2/2004
- Support and training for roll-out of Assets Management system by 3/2004
- Support and training of hospital based IT and lab professionals for ELR begins by 9/2003

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and its identified contractors will oversee these projects.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be measured by the implementation of an Assets Management system and participation in ELR.

CRITICAL CAPACITY #14: To ensure secure electronic exchange of clinical, laboratory, environmental, and other public health information in standard formats between the computer systems of public health partners. Achieve this capacity according to the relevant IT Functions and Specifications (see Appendix 4).

RECIPIENT ACTIVITIES:

1. Assess the existing capacity in your jurisdiction to exchange electronic data in compliance with public health information and data elements exchange standards, vocabularies, and specifications as referenced in the NEDSS initiative. (Build according to IT Functions #1-9 in Appendix 4.) If necessary, develop a proposal for improvements during this budget cycle. **(LINK WITH CROSS CUTTING ACTIVITY *INTEROPERABILITY OF IT SYSTEMS,* Attachment X)**

Strategies: What overarching approach(es) will be used to undertake this activity?

MDPH will continue to enhance its electronic communications capabilities to provide secure, timely test reporting and surveillance information with our public health partners to support public health disease reporting and surveillance activities. MDPH has recently completed the conceptual design of the Electronic Laboratory Reporting and Communication (ELR) Component. The ELR component will allow secure client transactions through web-based communications.

The conceptual design of the ELR Component includes the use of a commercial interface engine as a solution for transmission and reception of HL7 messages and data. The interface engine will be selected to support HL7, Version 2.4 and earlier, ebXML, message queues and the ability to translate and manipulate LOINC and SNOMED codes. The web interface will use standard web security features of the web server platform, which will be selected during the detailed design phase, and include strong authentication connectivity. These include HTTP User Authentication and session encryption using HTTPS and secure socket layer (SSL).

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Define the detailed requirements of the ELR Component to report laboratory results using HL7 messaging and remote laboratory test result inquiry capabilities
- Determine the readiness of select hospitals and laboratories to report results electronically.
- Evaluate that system participant's HL7 interface capabilities
- Ensure that system participants have Internet Connectivity and that the connection is a minimum of 56Kbps or ideally 384 Kbps or greater and can support 128 bit encryption.
- Create functional specifications that include the defined business logic, data requirements and information processing. This also will include the identification of potential COTS solutions
- Refine technical architecture including specifications of the optimum technology associated with the hardware, software, communications and interface of the ELR Component.

Timeline: What are the critical milestones and completion dates for each task?

- Requirements defined by 9/2003
- Hospitals and laboratories readiness evaluated by 9/2003
- Ensure Internet Connectivity and encryption by 9/2003
- Create functional specifications and identification of potential COTS solutions by 12/2003
- Refine technical architecture by 3/2004

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and its identified contractors will oversee this project.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

The ELR Component will be developed in accordance with the MPDH Systems Development Life Cycle (SDLC) methodology. Metrics will be employed on selected tasks as appropriate to monitor performance, identify potential issues as early as possible in the SDLC process and determine the effectiveness of remedial actions taken. Major milestones dates will be monitored as to the estimated and actual completion dates. Once the metrics are defined and gathered, they will be communicated regularly to the Project Team for project tracking and process improvements.

2. Ensure that the technical infrastructure exists to exchange a variety of data types, including possible cases, possible contacts, specimen information, environmental sample information, lab results, facilities, and possible threat information. (Build according to IT Functions #1-9 in Appendix 4). **(CRITICAL BENCHMARK #21)**

Strategies: What overarching approach(es) will be used to undertake this activity?

As discussed in Focus Area B, MDPH is a NEDSS Base System (NBS) state. MDPH plans a full interface between ELR and the NBS. For specific details on the planned implementation of the NBS and ELR, please refer to Focus Area B, Critical Capacity 5, Recipient Activity 11 and Focus Area E, Critical Capacity 14, Recipient Activity 1.

All systems will be in compliance with IT Functions 1-9 in Appendix 4.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Please refer to Focus Area B, Critical Capacity 5, Recipient Activity 11 and Focus Area E, Critical Capacity 14, Recipient Activity 1.

Timeline: What are the critical milestones and completion dates for each task?

Please refer to Focus Area B, Critical Capacity 5, Recipient Activity 11 and Focus Area E, Critical Capacity 14, Recipient Activity 1.

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Please refer to Focus Area B, Critical Capacity 5, Recipient Activity 11 and Focus Area E, Critical Capacity 14, Recipient Activity 1.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Please refer to Focus Area B, Critical Capacity 5, Recipient Activity 11 and Focus Area E, Critical Capacity 14, Recipient Activity 1.

3. Develop firewall capabilities and Web technology and expertise to implement and maintain an

XML-compliant SOAP service for the secure exchange of information over the Internet.

Strategies: What overarching approach(es) will be used to undertake this activity?

A key function of the Electronic Laboratory Reporting (ELR) project, State Laboratory Information System (SLIS) and NBS solution, are XML-compliant SOAP secure messaging services designed for enterprise utilization. Leveraging a shared services model, MDPH plans to work closely with other key stakeholders, both internal and external to the Department. All the necessary firewall and Demilitarized Zones will be established to ensure application security. Additionally, this security will be tested and analyze by independent parties.

For additional information please refer to Critical Capacity 13, Recipient Activity 3a.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Please refer to Critical Capacity 13, Recipient Activity 3a.

Timeline: What are the critical milestones and completion dates for each task?

Please refer to Critical Capacity 13, Recipient Activity 3a.

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Please refer to Critical Capacity 13, Recipient Activity 3a.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Please refer to Critical Capacity 13, Recipient Activity 3a.

4. Develop systems and databases to implement the specifications, vocabularies, and standards to exchange like data with public health partners.

Strategies: What overarching approach(es) will be used to undertake this activity?

MDPH has an established Data Standards Committee which has been meeting monthly since January 2002. The Committee includes representatives from all MDPH bureaus, with the goal of setting MDPH-wide data standards to facilitate secure electronic information exchange both within MPDH and with our public health partners. The MDPH standards are based upon authoritative national and international sources and drawn primarily from PHIN standards including LOINC and SNOMED.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Continued facilitation of and participation in the Data Standard Committee
- Utlization of PHIN compliant coding systems for all laboratory data and other public health information systems
- Obtain appropriate LOINC and SNOMED codes from CDC for all reportable events

Timeline: What are the critical milestones and completion dates for each task?

- On-going particpation in the Data Standard Committee

- Obtain and utilize appropriate code sets by 10/2003

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and CDC.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be determined by utlization of all nationally defined standards.

5. Implement message parsing technology to allow for the creation and processing of public health information messages.

Strategies: What overarching approach(es) will be used to undertake this activity?

In coordination with the ELR project, MDPH plans to create a strategic enterprise solution for message brokering including processing and transmitting. This technology will support interfaces for numerous message protocols including, but not limited to, X12 and HL7. As part of the system development life cycle, MDPH will consider COTS solutions and/or custom development.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Define requirements for message parsing technology
- Define high level architecture
- Design and develop or purchase technology
- Implement message broker technology

Timeline: What are the critical milestones and completion dates for each task?

- Definition of requirements for message parsing technology by 7/2003
- Define high level arhetecture by 3/2004
- Identify technological solution by 4/2004
- Initiate pilot implementation of message broker technology by 6/2004

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and partnering vendors.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be measured by the establishment of a pilot project. All contracted vendors engaged with MDPH must submit routine project progress reports to MDPH management for review. This fundamental requirement of the MDPH System Development Life Cycle and contract engagement is crucial in managing vendors.

6. Participate in national stakeholders meetings, data modeling activities, and joint application development sessions to help specify the data types that will be exchanged among public health partners and to understand how to implement them.

Strategies: What overarching approach(es) will be used to undertake this activity?

In addition to participation in national stakeholders meetings, MDPH has an established Data Standards Committee which has been meeting monthly since January 2002. The Committee includes representatives from all MDPH bureaus, with the goal of setting MDPH-wide data standards to facilitate secure electronic information exchange both within MPDH and with our public health partners. The MDPH standards are based upon authoritative national and international sources and drawn primarily from PHIN standards. Both the NBS coordinator/project manager and NBS Lead for MDPH are participants on the MDPH Data Standards Committee.

The NBS coordinator/project manager works with staff in the Bureau of Laboratory Sciences in a joint development project to facilitate confidential data exchange between MDPH and its clinical laboratory partners.

The NBS coordinator/project manager acts as a resource for staff at the Bureau of Environmental Health Assessment (BEHA) responsible for the development of the Environmental Health Tracking Network (EHTN).

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Continued participation in appropriate committees and attendance at all national stakeholders meetings

Timeline: What are the critical milestones and completion dates for each task?

- On-going

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be determined by participation in all appropriate forums and utlization of all nationally defined standards.

7. (HRSA/CDC Cross-Cutting Activity) Laboratory Data Standard
   a. Adopt and implement LOINC as the standard for electronic exchange of clinical laboratory results and associated clinical observations between and among public health department laboratories, hospital-based laboratories, and other entities, including collaborating academic health centers, that have a major role in responding to bioterrorism and other public health emergencies. **(CRITICAL BENCHMARK #22)**

Strategies: What overarching approach(es) will be used to undertake this activity?

As part of implementation of the NBS and ELR projects as defined previously, MDPH will utlize LOINC and SNOMED for all electronic exchange of clinical laboratory results and associated clinical

observations.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Utlization of PHIN compliant coding systems for all laboratory data and other public health information systems
- Obtain appropriate LOINC and SNOMED codes from CDC for all reportable events

Timeline: What are the critical milestones and completion dates for each task?

- Obtain and utilize appropriate code sets by 10/2003

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and CDC

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be determined by utlization of LOINC and SNOMED.

b. In connection with CDC-provided technical assistance, identify areas where refinement or extension of LOINC would enhance public health emergency preparedness.

Strategies: What overarching approach(es) will be used to undertake this activity?

In conjunction with CDC, MDPH will identify laboratory tests and clinical observations where nationally defined LOINC and or SNOMED codes are either unavailable or ambiguous.

Tasks: What key tasks will be conducted in carrying out each identified strategy?

- Obtain appropriate LOINC and SNOMED codes from CDC for all reportable events
- Assess code sets for completeness and communicate results to CDC

Timeline: What are the critical milestones and completion dates for each task?

- Obtain and utilize appropriate code sets by 10/2003
- Provide analysis of code sets by 1/2004

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

MDPH and CDC

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

Success will be determined by identification of gaps in coding sets and the subsequent utlization of LOINC and SNOMED.

ENHANCED CAPACITY #9: To provide or participate in an emergency response management system to aid the deployment and support of response teams, the management of response resources, and the facilitation of inter-organizational communication and coordination.

RECIPIENT ACTIVITIES:

1. Assess the existing capacity in your jurisdiction related to emergency response management systems. Identify existing systems and ascertain their relevance and suitability for public health participation, including disaster simulation, logistics management, threat tracking and management, geographic mapping for visualization of events, and emergency resource provision and management. If necessary, develop a proposal for improvements during this budget cycle. **(LINK TO CROSS CUTTING ACTIVITITY *INTEROPERABILITY OF IT SYSTEMS*, Attachment X)**

Strategies: What overarching approach(es) will be used to undertake this activity?

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Timeline: What are the critical milestones and completion dates for each task?

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

2. Ensure participation, training, and drilling of public health personnel in the use of an emergency response management system.

Strategies: What overarching approach(es) will be used to undertake this activity?

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Timeline: What are the critical milestones and completion dates for each task?

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

3. If an adequate system does not exist with emergency response partners, implement a commercial, off-the-shelf system for the support of these functions.

Strategies: What overarching approach(es) will be used to undertake this activity?

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Timeline: What are the critical milestones and completion dates for each task?

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

4. Train and drill public health participants in the use of existing emergency response systems.

Strategies: What overarching approach(es) will be used to undertake this activity?

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Timeline: What are the critical milestones and completion dates for each task?

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

ENHANCED CAPACITY #10: To ensure full information technology support and services.

RECIPIENT ACTIVITIES:

1. Assess the existing capacity in your jurisdiction related to the full provision of information technology support according to industry standard practices including modern software development practices, user support practices, and ongoing monitoring and maintenance of systems. If necessary, develop a proposal for improvements during this budget cycle.

Strategies: What overarching approach(es) will be used to undertake this activity?

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Timeline: What are the critical milestones and completion dates for each task?

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

2. Implement explicit arrangements/written policies for adequate network and desktop user support, including the ability of users to obtain answers to hardware and software operational questions, repair of equipment, installation of new equipment and software, administration of servers where appropriate, and other general technical support.

Strategies: What overarching approach(es) will be used to undertake this activity?

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Timeline: What are the critical milestones and completion dates for each task?

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

3. Develop technical support staff available in an industry standard ratio of one full time equivalent support person for each 60-100 workstations covered.

Strategies: What overarching approach(es) will be used to undertake this activity?

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Timeline: What are the critical milestones and completion dates for each task?

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

4. Provide critical operational support functions with less than 24-hour alternate site provision.

Strategies: What overarching approach(es) will be used to undertake this activity?

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Timeline: What are the critical milestones and completion dates for each task?

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?

5. Implement software and/or systems to support critical activities elsewhere in this guidance with appropriate redundancy, systems mirroring, and/or systems fail-over to provide secure and

continuous access to critical IT services.

Strategies: What overarching approach(es) will be used to undertake this activity?

Tasks: What key tasks will be conducted in carrying out each identified strategy?

Timeline: What are the critical milestones and completion dates for each task?

Responsible Parties: Identify the person(s) and/or entity assigned to complete each task.

Evaluation Metric: How will the agency determine progress toward successful completion of the overall recipient activity?
